

NOTES ON THE FOOD HABITS OF *STRUMIGENYS LOUISIANAE* ROGER (HYMENOPTERA: FORMICIDAE).

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Although *Strumigenys louisianae* Roger is quite common in the Southern States and one of the most interesting of our native ants, its biology has never been thoroughly studied, and apparently nothing has been published on its food habits. Therefore, recent observations on the food preferences of two colonies kept in captivity seem worthy of note. These colonies were taken two weeks apart in Mobile, Alabama and in Allgood, Blount Co., Alabama during October 1949, and were established in small modified Janet nests. They have been kept under observation for a period of three months.

The evidence which has been accumulated so far seems to indicate that this species normally preys on certain groups of Collembola and that it may also feed upon a few other small arthropods, particularly if these are dead or injured. Collembola accepted by the ants, or else rejected, are given at the end of this article. Those springtails classified as "accepted" were either captured alive or taken when dead or injured and were retrieved and preserved after the ants had carried them into the brood chambers. Those classified as "rejected" were never observed to be molested as they wandered through the nest, meeting foraging worker ants, entering the brood chambers, and even reposing in the galleries as workers passed over them. There may even be further selectivity within the accepted group, for the ants seemed to prefer entomobryids over isotomids, only occasionally taking one of the latter. In the artificial nests the ants were observed to stalk the Collembola only for very short distances, and were apparently unaware of them when more than a few millimeters away. They approached the springtails in cautious slow motion, spreading their mandibles apart almost 180° and striking suddenly when little less than a mandible-length away. In the catches observed, the ants lifted their prey into the air immediately upon seizing them and curled their abdomens forward in an attempt to sting. The Collembola offered surprisingly little resistance, usually remaining entirely passive, and were either dead or completely crippled when dropped to the floor shortly afterwards. Only once was a springtail observed to use its furcula forcefully; as it was seized on a wall of

the food chamber, it kicked itself and the ant about one centimeter out into the chamber. However, the ant retained a firm grip and quickly subdued it.

In addition to Collembola, a wide variety of other arthropods were offered to the ants. These include millipedes, symphylans, mites, spiders, pseudoscorpions, aphids, psocids, thrips (*Tubulifera*), small beetles and beetle larvae, flies, roaches, termites, homopteran nymphs, etc. Of these, only very small termite nymphs (*Reticulitermes* sp.) were accepted when active and uninjured. Flies of two families (*Psychodidae*, *Phyllomyzidae*), symphylans (*Scutigereilla* sp.), and a single adult psocid were accepted when dead or injured. However, once in the brood chamber, the flies and the psocid were either ignored or fed upon very sparingly.

Four nests of *louisianae* were examined in the field, and one of these (Tuscaloosa, Alabama, May 9, 1949, collected by B. D. Valentine) contained recognizable remains in the galleries. Certain of these remains were determined as Collembola: *Isotoma viridis* Bourlet, *Proisotoma* sp., and *Entomobrya* probably new sp. by Mr. Christiansen.

The writer wishes to express his thanks to Mr. Kenneth Christiansen for determining the Collembola and to Mr. W. L. Brown, Jr. for checking the determinations of the ants.

Collembola accepted by the ants:

Lepidocyrtus cyanus Tullberg
Entomobrya ?*purpurascens* Packard
Ptenothrix marmorata (Packard)
Salina decorata Mills
Isotoma ?*subviridis* Folsom

Collembola rejected by the ants:

Neanura muscorum (Templeton)
Hypogastrura probably new species

Calaphis coloradensis Granov. This small green birch aphid often has been encountered along streams in Utah, on *Betula fontinalis*, sometimes in moderately injurious abundance on undersides of the leaves. Collections include: Monte Cristo, Utah, July 18, 1939; Mink Creek, Idaho, July 1947; and Chateau, Montana, July 23, 1946; Indian Creek, Utah, May 11, 1949, and Devil's Slide, Utah, July 24, 1945. G. F. KNOWLTON, Logan, Utah.